

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BOARD OF PATENT APPEALS AND INTERFERENCES**

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IN RE APPLICATION OF:    **RAY HEIDEL**

SERIAL NO.                    **10/840,129**

GROUP ART UNIT:            **3653**

EXAMINER:                   **JEFFREY A. SHAPIRO**

FOR:                           **NOTE ACCEPTOR-DISPENSER VALIDATOR**

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**AMENDED  
APPEAL BRIEF**

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### REAL PARTY IN INTEREST

The real party in interest is JCM American Corporation, the assignee of record, which is a subsidiary of parent company Japan Cash Machine Co., Ltd.

## RELATED APPEALS AND INTERFERENCES

None.

### STATUS OF CLAIMS

A PRELIMINARY AMENDMENT was filed with the initial divisional application filing on May 5, 2004, canceling claims 1-25 of the parent application and presenting new claims 26-30. .

Claims 26-30 are pending in this application. Claims 26-30 have been rejected by the Examiner.

Claims 26-30 are reproduced in the CLAIMS APPENDIX attached hereto.

**This appeal is directed to each of claims 26 – 30. Applicant appeals the rejection of each of these claims as presented by the Examiner in the Final Office Action dated March 7, 2007.**

### STATUS OF AMENDMENTS

A PRELIMINARY AMENDMENT was filed with the initial divisional application filing on May 5, 2004, cancelling claims 1-25 of the parent application and presenting new claims 26-30.

Examiner Shapiro issued a non-final OFFICE ACTION on August 29, 2005 rejecting claims 26-30 and objecting to claim 28. Applicant filed an AMENDMENT in response to the OFFICE ACTION on December 5, 2005.

The Examiner issued a final rejection on February 8, 2006. Applicant filed an AMENDMENT AFTER FINAL, along with a REQUEST FOR CONTINUED EXAMINATION (RCE) on April 26, 2006.

Examiner Shapiro issued a non-final OFFICE ACTION on July 18, 2006. Applicant filed a response thereto on December 18, 2006.

The Examiner issued a final rejection on March 7, 2007. Applicant did not file an AMENDMENT AFTER FINAL REJECTION, but instead filed a NOTICE OF APPEAL on May 10, 2007.



## SUMMARY OF CLAIMED SUBJECT MATTER

For purposes of this appeal brief, citations to the specification will be in the form of “Spec. at page:line for US Patent Application Serial No. 10/840,129 (the application under appeal) followed by citations to the corresponding published US patent application (US 2004/0206601 to Heidel (hereinafter “*Heidel*”)) and the paragraphs in that published US patent application. Generally, *Heidel* is directed to a note acceptor-dispenser validator system configured to accept a “dispense change” instruction from a host processor to cause the processing, and dispensing of notes and coins as change for a vending machine type of customer service device for selling commercial products to customers.

26. A customer service device comprising:

a host machine 10 for the vending of commercial products, said host machine 10 including a host processor 19, and a housing 14; *See Figure 1, Spec. at 6:22-7:7, see also Heidel at Figure 1 and paragraph 0014, third sentence and paragraph 0015 first, second and third sentence*

a note acceptor-dispenser validator system 12 for accepting currency notes and issuing credits to the host processor 19 to cause the dispensing of the commercial products; *See Figure 1, 2, 3 and 4, Spec at 6:17-18, 8:13-23, 8:26-9:2 and 15:20-22; see also Heidel at Figures 1, 2, 3, and 4 and paragraphs 0014 (first sentence), 0018 (entire paragraph), 0019 (second sentence), and 0034 (first sentence)*

said note acceptor-dispenser validator system 12 being further configured to accept a dispense change instruction from said host processor 19 to cause the processing, and dispensing

of notes and coins as change based on the communication with said host processor 19, wherein said acceptor-dispenser validator system 12 is mounted in said housing 14, said note acceptor-dispenser validator system 12 including; *See Figure 3 and 4, Spec. at 13:27-14:5-8, 15:20-22; see also Heidel at Figures 3 and 4 and paragraphs 0030 (third sentence), 0031 (first sentence), and 0034 (first sentence)*

a note validator 26, 28 for receiving notes and sensing data relating to the authenticity, denomination, type and condition of notes received by said note validator 26, 28, said note validator 26, 28 generating signals corresponding to the sensed data for each received note; *See Figure 2, Spec. at 8:13-16 and 8:20-23; see also Heidel at Figure 2 and paragraph 0018 (first and third sentences).*

a validator processor for receiving and comparing 42, 44 said sensed data signals with stored data to validate said notes; *See Figure 4, Spec. at 8:20-23; see also Heidel at Figure 4 and paragraph 0018 (third sentence).*

a note box 32 configured to receive and hold notes received by said note validator 26, 28; *See Figure 2 and 3, Spec. at 8:24-9:2; see also Heidel Figures 2 and 3 and paragraph 0019 (first and second sentences)*

a note hopper 34 for receiving and storing up to a selected number of notes of a pre-selected denomination which are received by said note validator 26, 28; and *See Figure 2 and 3, Spec. at 8:24-9:2; 11:24-26; see also Heidel Figures 2 and 3 and paragraphs 0019 (first and second sentences and, 0026 (first sentence)*

a transportation unit 30 for directing said notes determined to be authentic to one of said note box 32 and said note hopper 34 and for dispensing notes from said note hopper 34 in response to an instruction from said validator processor. *See Fig. 1-3, Spec. at 4:9-25, 8:13-16,*

8:20-23, 8:24-9:2, 11:24-26, 13:4-8; *see also Heidelberg Figures 1-3 and paragraphs 0007 (first, second, third, and fourth sentences), 0018 (first and third sentences), 0019 (first and second sentences), 0026 (first sentence), and 0028 (first and second sentences)*

27. A vending machine comprising:

a host machine 10 for the automated sale of commercial products, said host machine 10 including a host processor 19, and a housing 14; *See Figure 1, Spec. at 6:22-24, 7:1-7; see also Heidelberg at Figure 1 and paragraph 0014, third sentence and paragraph 0015 first, second and third sentence*

a note acceptor-dispenser validator system 12 for accepting currency notes and issuing credits to the host processor 19 to cause the dispensing of the commercial products; *See Figures 1-4, Spec. at 6:17-18, 8:13-23, 8:26-9:2, 15:20-22; see also Heidelberg at Figures 1, 2, 3, and 4 and paragraphs 0014 (first sentence), 0018 (entire paragraph), 0019 (second sentence), and 0034 (first sentence)*

said note acceptor-dispenser validator system 12 being further configured to accept a dispense change instruction from said host processor 19 to cause the processing, and dispensing of, notes and coins as change based on the communication with said host processor 19, wherein said acceptor-dispenser validator system 12 is mounted in said housing 14, and said note acceptor-dispenser validator system 12 includes; *See Figures 3 and 4, Spec. at 13:27-14:8, 15:20-22; see also Heidelberg at Figures 3 and 4 and paragraphs 0030 (third sentence), 0031 (first sentence), and 0034 (first sentence)*

a note validator 26, 28 for receiving notes and sensing data identifying the type and condition of the received notes; *See Figure 2, Spec. at 8:13-16 and 8:20-23; see also Heidelberg at Figure 2 and paragraph 0018 (first and third sentences).*

a note box 32 to hold notes received by said note validator 26, 28; *See Figures 2 and 3, Spec. at 8:24-9:2; see also Heidel Figures 2 and 3 and paragraph 0019 (first and second sentences)*

a note hopper 34 to temporarily hold pre-selected characteristic notes received by said note validator 26, 28, said notes being available to be subsequently dispensed by said note acceptor-dispenser validator system 12; and *See Figures 2 and 3, Spec. at 8:24-9:2, 11:24-26; see also Heidel Figures 2 and 3 and paragraphs 0019 (first and second sentences and, 0026 (first sentence)*

a transportation unit 30 for transporting received notes from said note validator 26, 28 to one of said note box 32 and said note hopper 34 and for transporting notes from said note hopper 34 out through said note validator 26, 28 in response to an instruction. *See Figures 1-3, Spec. at 4:9-25, 8:13-16, 8:20-23, 8:24-9:2, 11:24-26, 13:4-8; see also Heidel Figures 1-3 and paragraphs 0007 (first, second, third, and fourth sentences), 0018 (first and third sentences), 0019 (first and second sentences), 0026 (first sentence), and 0028 (first and second sentences)*

28. A vending machine comprising:

a host machine 10 for the automated sale of commercial products, said host machine 10 having a host processor 19, and a housing 14; *See Figure 1, Spec. at 6:22-24, 7:1-7; see also Heidel at Figure 1 and paragraph 0014, third sentence and paragraph 0015 first, second and third sentence*

a note acceptor-dispenser validator system 12 for accepting currency notes and issuing credits to the host processor 19 to cause the dispensing of the commercial products; *See Figures 1, 2, 3 and 4, Spec. at 6:17-18, 8:13-23, 8:26-9:2, 15:20-22; see also Heidel at Figures 1, 2, 3,*

*and 4 and paragraphs 0014 (first sentence), 0018 (entire paragraph), 0019 (second sentence), and 0034 (first sentence)*

said note acceptor-dispenser validator system 12 being further configured to accept a dispense change instruction from said host processor 19 to cause the processing, and dispensing notes and coins as change based on communications with said host processor 19, wherein said acceptor-dispenser validator system 12 is mounted in said housing 14, and said note acceptor-dispenser validator system 12 further comprises; *See Figures 3 and 4, Spec. at 13:27-14:8, 15:20-22; see also Heidel at Figures 3 and 4 and paragraphs 0030 (third sentence), 0031 (first sentence), and 0034 (first sentence)*

a note validator 26, 28 having an opening 28 for receiving notes; *See Figure 2, Spec. at 8:13-20; see also Heidel at Figure 2 and paragraph 0018 (first and second sentence)*

a note storage area 32,34 to store notes received by said note validator when said notes are characterized by said note validator 26, 28 as meeting pre-selected characteristics; and *See Figures 2 and 3, Spec. at 8:24-26; see also Heidel at Figures 2 and 3 and paragraphs 0019 (first sentence)*

a transportation unit 30 for transporting notes from said note validator 26, 28 to said note storage area 32, 34 and for dispensing notes from said note storage area 32,24 through said opening 28 in said note validator 26, 28 in response to an instruction. *See Figures 1-4, Spec. at 4:9-23, 8:13-16 and 8:20-23, 8:24-9:2, 11:24-26, 13:4-8; see also Heidel Figures 1-4 and paragraphs 0007(first, second and third sentences), 0018 (first and third sentences), 0019 (first and second sentences), 0026 (first sentence), and 0028 (first and second sentences)*

29. A vending machine for dispensing product, the vending machine comprising:  
a host machine 10 for the dispensing of commercial products, said host machine 10 including a host processor 19, and a housing 14; *See Figures 1, Spec. at 6:22-24, 7:1-7; see also Heidel at Figure 1 and paragraph 0014, third sentence and paragraph 0015 first, second and third sentence*

a note acceptor-dispenser validator system 12 for accepting currency notes and issuing credits to the host processor 19 to cause the dispensing of the commercial products; *See Figures 1, 2, 3 and 4, Spec. at 6:17-18, 8:13-23, 8:26-9:2, 15:20-22; see also Heidel at Figures 1, 2, 3, and 4 and paragraphs 0014 (first sentence), 0018 (entire paragraph), 0019 (second sentence), and 0034 (first sentence)*

said note acceptor-dispenser validator system 12 being further configured to accept a dispense change instruction from said host processor 19 to cause the processing, and dispensing notes and coins as change based on communications with said host processor 19, wherein said acceptor-dispenser validator system 12 is mounted in said housing 14, and said note acceptor-dispenser validator system 12 further comprises: *See Figures 3 and 4, Spec. at 13:27-14:8, 15:20-22; see also Heidel at Figures 3 and 4 and paragraphs 0030 (third sentence), 0031 (first sentence), and 0034 (first sentence)*

a note validator 26, 28 having an opening 28 for receiving notes and a validator head 26 for sensing data relating to the authenticity, denomination, and type of note received by said note validator 26, 28, said note validator 26, 28 generating signals corresponding to the sensed data for each received note; *See Figure 2, Spec. at 8:13-16 and 8:20-23; see also Heidel at Figure 2 and paragraph 18 (first and third sentences).*

a validator processor for receiving and comparing 42, 44 said sensed data signals with stored data to validate said notes and generate a signal signifying receipt and the value of said note to said host processor 19; *See Figure 4, Spec. at 8:20-23; see also Heidel at Figure 4 and paragraph 0018 (third sentence).*

a note box 32 configured to receive and hold notes received by said note validator 26, 28; *See Figures 2 and 3, Spec. at 8:24-9:2; see also Heidel Figures 2 and 3 and paragraph 0019 (first and second sentences)*

a note hopper 34 for receiving and storing pre-selected characteristic notes received by said note validator 26, 28; and *See Figures 2 and 3, Spec. at 8:24-9:2 and 11:24-26; see also Heidel Figures 2 and 3 and paragraphs 0019 (first and second sentences and, 0026 (first sentence)*

a transportation unit 30 for directing validated notes to one of said note box 32 and said note hopper 34 for dispensing notes from said note hopper 34 through said opening 28 in said note validator 26, 28 in response to a dispense signal. *See Figures 1-4, Spec. at 4:9-23, 8:13-16, 8:24-9:2, 11:24-26, 13:4-8; see also Heidel Figures 1-4 and paragraphs 0007 (first, second and third sentences), 0018 (first and third sentences), 0019 (first and second sentences), 0026 (first sentence), and 0028 (first and second sentences)*

30. The vending machine for dispensing product of claim 29, wherein said validator head 26 determines the value of notes dispensed by said note acceptor-dispenser 12 prior to their being dispensed. *See Figures 1-4, Spec. at 8:24-9:4; see also Heidel at Figures 1-4 and paragraph 0019 (first, second, and third sentences).*

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are as follows:

- 1) Claims 26-30 were rejected under 35 USC 103(a) as being unpatentable over Ramachandran et al (US 6, 941,274) in view of Katou et al (US 2004/0182677A1) and
- 2) Claims 26-30 were rejected under 35 USC 103(a) as being unpatentable over Ramachandran et al (US 6, 941,274) in view of Graef et al (US 6,315,194)



## APPELLANT'S ARGUMENT

**A. Claims 26-30 are patentable over Ramachandran in view of Katou.**

The Examiner has rejected claims 26-30 under 35 USC 103(a) as being unpatentable over Ramachandran et al (US 6, 941,274) in view of Katou et al (US 2004/0182677A1) *Final office action at pages 2-4.*

The Board should overturn this rejection because the proposed combination of Ramachandran and Katou do not teach, describe, or suggest each and every element of independent claims 26, 27, 28, and 29 or of dependent claim 30 for the reasons set forth below.

## 1. Summary of Prior Art

**(a). Ramachandran**

Ramachandran is directed to an automated currency transaction machine capable of recycling currency (receiving and dispensing received currency). The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion. *See Abstract of Ramachandran*. The device of Ramachandran does not vend merchandise or products. Figs 1 and 4 of Ramachandra are reproduced below:

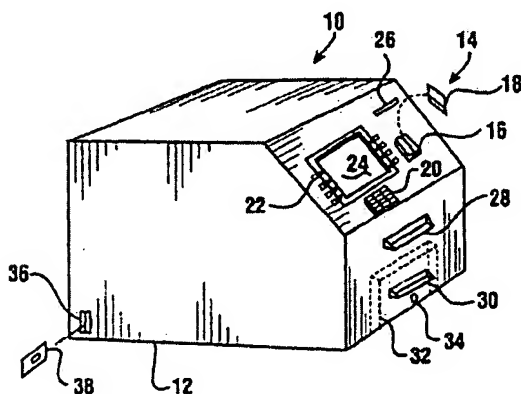
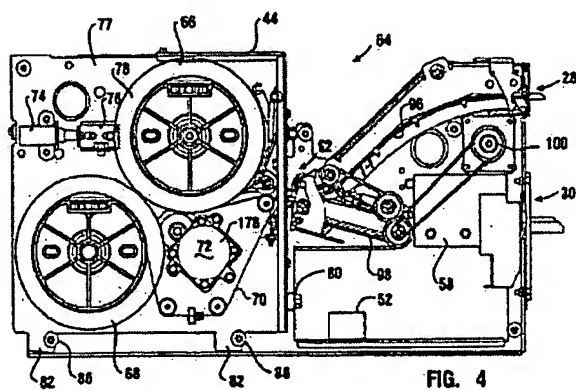


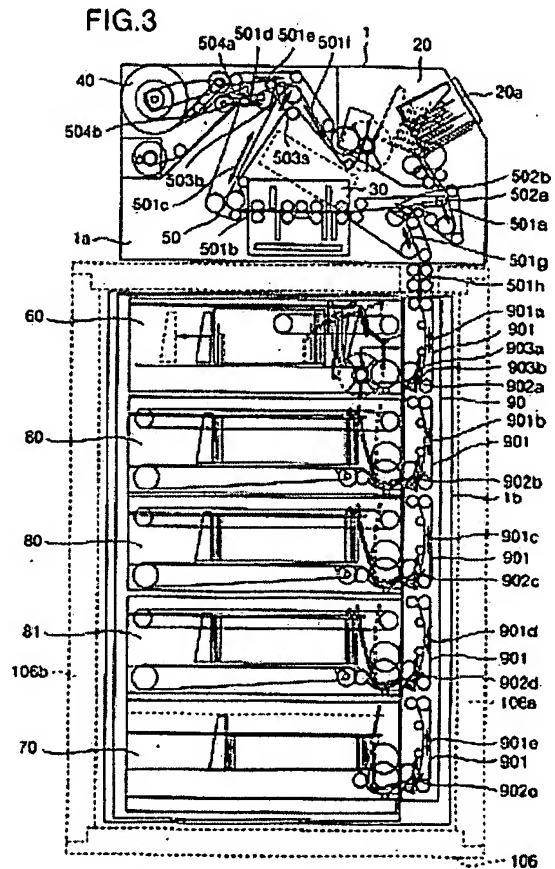
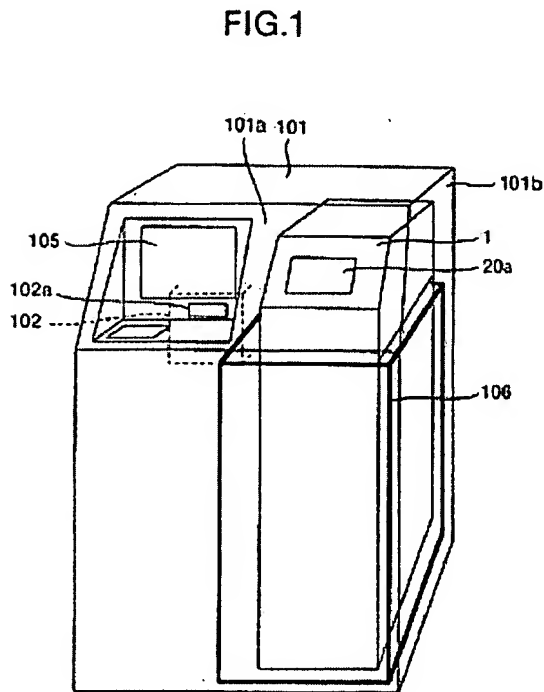
FIG. 1



**FIG. 4**

(b) Katou

Katou is directed to an Automated Transaction Machine, commonly known as an "ATM" type of machine that may be found for example in a bank or banking station. The Katou machine is essentially an ATM that can both receive and validate currency and dispense currency. See *Abstract of Katou*. Like Ramachandran, the ATM of Katou does not vend merchandise or products. Figs 1 and 3 of Katou are reproduced below:



## **2. Combination Compared to Claimed Invention**

As set forth above, both of the cited references are ATM machines, they do not dispense commercial products. By contrast, the claims at issue are directed to vending machines and similar customer service devices which include an acceptor-dispenser-validator system that accepts currency notes and issues credit to the host processor to cause the dispensing of commercial products and the system receives a signal to dispense change from the host processor to cause the dispensing of notes and coins as change based upon the communication from the host processor.

## **3. Claim 26**

Claim 26 is directed to a customer service device comprising:

a host machine for the vending of commercial products, said host machine including a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing of notes and coins as change based on the communication with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, said note acceptor-dispenser validator system including;

a note validator for receiving notes and sensing data relating to the authenticity, denomination, type and condition of notes received by said note validator, said note validator generating signals corresponding to the sensed data for each received note;

a validator processor for receiving and comparing said sensed data signals with stored data to validate said notes;

a note box configured to receive and hold notes received by said note validator;

a note hopper for receiving and storing up to a selected number of notes of a pre-selected denomination which are received by said note validator; and

a transportation unit for directing said notes determined to be authentic to one of said note box and said note hopper and for dispensing notes from said note hopper in response to an instruction from said validator processor.

**(a) Examiner's Rejection of Claim 26**

The Examiner rejected each of claims 26-30 as unpatentable over Ramachandran in view of Katou and gave a single argument applied to each independent claim. The Examiner states that:

"Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59, said ATM intended to be used in a vending machine for the purpose of providing ATM capabilities such as accepting and dispensing currency notes.

As described in Claims 26-30, Ramachandran does not expressly disclose, but Katou et al discloses a note validator (30), a validator processor (35) with memory (107d), a note box (60, 80 and 81), a temporary storage hopper (40), a transportation unit (501a-h), (502a-b), (503a-c), (504), (901 a-e), (902a-e) and (903a-e), the notes being sent through validator (30) in either direction (501 b). Note that the deposit withdrawal port (20) can be construed as the validator opening, with the entire structure (1) being construed as the validator. Note also that bill discrimination unit (30) can be construed as inherently sensing actual bill pattern information for comparison with template patterns stored in memory (107d) and as inherently determining the value of bills detected as received and dispensed by the apparatus.

Regarding Applicants' newly added claim language, the phrase "for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products" is considered intended use

language with no patentable weight. Nonetheless, Katou highly suggests that it performs the credit/debit accounting function. See Katou, figure 2 and paragraph 62. Note that this is how all bill handling devices operate. Katou similarly is considered to suggest a configuration to "accept a dispense change instruction from said host processor", since this is how bill handling devices operate. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have embodied Katou's note handling mechanism in place of Ramachandran's note handling mechanism for use in a combination ATM/vending machine that dispenses merchandise. The suggestion/motivation to do so would have been for the purpose of providing a smaller, more reliable note handling device for vending machines which does not cause bill jams. See Katou, paragraph 5, first five lines and paragraphs 9-11. Further, one ordinarily skilled in the art would have recognized the benefit of combining an ATM and vending machine because customers drawn to the vending machine to obtain money through the ATM device of the vending machine may be more willing to make impulsive purchases from the vending machine portion of the apparatus due to the availability of currency, thereby resulting in increased sales of vended goods as compared to a free-standing vending machine."

*See Final Rejection pages 2-4.*

#### **(b) Legal Standard for an Obviousness Rejection**

To establish obviousness, the prior art reference must teach or suggest all the claim limitations and it must be obvious to a person of ordinary skill in the art to combine the references. As the Supreme Court recently phrased the issue: "[t]he proper question to have asked was whether a designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading" the primary reference with a something from the secondary reference. *KSR Int. Inc. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007); *see also* M.P.E.P. § 2143 (requiring some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings). Under the MPEP test and the pre-*KSR* Federal Circuit standard, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

**(c) The combination of Ramachandran and Katou does not teach, describe, or suggest each claim element of claim 26.**

Initially, Applicant disagrees with the Examiner's characterization of Ramachandran as intended to be used in a combination ATM/vending machine that dispenses merchandise. The Examiner indicates: "Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59..." the Abstract of Ramachandran does not discuss vending machines at all, it instead makes clear that Ramachandran is directed to an ATM machine "of the recycling currency type". The Abstract states:

"The invention relates to an automated transaction machine of the recycling currency type. The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The automated transaction machine includes a chest portion and a top hat portion. The portions have a front side and a rear side. The rear side of the machine is primarily intended for use by the merchant. The front side of the machine is primarily intended for use by a customer. The merchant side of the chest portion includes an inlet opening for inserting cash and an outlet opening for dispensing cash. The customer side of the chest portion also includes an outlet opening for dispensing cash. The top hat portion includes a separate user interface on the merchant side and a separate user interface on the customer side. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion."

Similarly, the text of the specification identified by the Examiner does not mention vending machines, Ramachandran at col. 2, lines 45-59; recites:

"Recently automated transaction machines have been developed that are capable of "recycling" currency. Such machines are capable of accepting currency notes from a user or operator, and determining the genuineness and particular type of each note. Such machines selectively store the deposited notes in locations within the machine. At a later time when the same or another user requests a dispense of notes, the machine dispenses the previously deposited notes to the user. While such machines have the capability of having the note supplies replenished without accessing the interior of the machine, such machines are

generally complex and expensive. The installation of such a machine would generally not be cost justified in situations where relatively low cost, cash dispense only type machines are currently used.”

Although the sections referenced by the Examiner do not teach, describe, or suggest vending machines, there is some discussion of vending machines in Ramachandran. However, the discussion does not teach, describe, or suggest the system of the claim that includes the operation of the machine in dispensing change and commercial products. For example, the background portion of the Ramachandran reference addresses multiple problems associated with having ATM machines incorporated into vending machines. In identifying multiple limitations and associated problems, Ramachandran never mentions or addresses the issue of how to interact with the vending machine so as to allow dispensing of currency, or in particular selected received currency, to recycle as change for vending transactions. After discussing the limitations, Ramachandran addresses the problem he seeks to resolve, stating at col. 3:43-52:

“Thus there exists a need for an automated transaction machine that is inexpensive to produce and operate, but that is also highly reliable. There further exists a need for an automated transaction machine that is capable of being replenished with currency notes or other sheets of value without having to access the note storage areas in the interior of the machine. There further exists a need for an automated transaction machine which includes a note receiving and dispensing component that adds only limited cost to the production and operation of the machine.”

The system of Ramachandran is thus at most merely directed to the addition of an ATM to a vending machine so that two separate functions are provided in one location. However, there is no teaching, description, or suggestion in Ramachandran of using the note acceptor-dispenser mechanism of the ATM as part of the mechanism by which a commercial product is purchased and change is provided. As noted in col. 4 line 63 through col. 5, line 4 of Ramachandran which states: “The foregoing objects are accomplished in an exemplary embodiment by an automated transaction machine. The automated transaction machine may be a machine whose primary function is the receipt and/or dispensing of sheets such as currency notes. Alternatively the automated transaction machine may be associated with a primary function such as the vending of motor fuel, lottery tickets, transit tokens or other transactions and

may include the dispensing and/or receipt of sheets having value, such as currency.” All subsequent description in Ramachandran are for the operation of the ATM portion of the system in typical ATM fashion, i.e. the deposit and/or withdrawal of currency by a customer or merchant. There is no teaching, description, or suggestion of using the mechanism of Ramachandran itself for accepting bills and providing products and, more importantly to the present invention, there is no discussion of providing selected currency for recycling as change for a vending transaction. Rather, the vending described in Ramachandran is a supplementary function that uses other mechanisms than are described in the device of Ramachandran.

With the foregoing limitations of Ramachandran in mind, applicant submits that not only would the proposed combination of components from Katou into the device of Ramachandran not be obvious, but significantly that the references (either alone or in combination) do not even teach all of the elements of the claims. For example, Claim 26 recites the limitation of a note hopper for receiving and storing up to a selected number of notes of a pre-selected denomination which are received by the note validator. The Examiner contends that the temporary storage hopper (40) of Katou reads on this element. Applicant respectfully disagrees. The storage hopper of Katou is not equivalent to, nor does it teach, describe, or suggest the note hopper of claim 26. As stated in paragraph 79 of Katou: “The temporary storage box 40 has a function of successively accepting bills deposited from the deposit/withdrawal port 20 and kind-settled by the bill discriminating unit 30 at the time of deposit transaction, reserving them temporarily until the transaction is materialized, and successively discharging the bills after the materialization of the transaction.”

As is clear from the description in Katou, the temporary storage unit is very different from the note hopper of claim 26. First of all, the temporary storage unit 40 of Katou accepts all bills that are deposited into the ATM of Katou. The temporary storage unit 40 of Katou holds all bills temporarily until a transaction is completed and then disgorges them in entirety. This is in contrast to the note hopper of claim 26 in which a “selected number of notes of a pre-selected denomination” are received and stored. These notes can be selectively dispensed, one or more sequentially, in response to an instruction from the validator processor which determines the exact amount of change to be discharged. Nothing in Katou suggests dispensing selected notes from the temporary storage unit 40.



Because the combination cited by the Examiner does not include all elements of the cited claim, the combination cannot teach, describe, or suggest the invention of claim 26.

The cited combination also lacks the note acceptor-dispenser validator system that accepts a dispense change instruction and dispenses notes and coins as change as called out in claim 26. Katou is an ATM machine and therefore does not make change at all. There is no change in an ATM transaction since there is no product purchased or provided. Similarly, the Ramachandran reference has no teaching, description, or suggestion of making change including bills and coins. In fact, the Ramachandran reference does not mention coins at all. The only mention of change in Ramachandran is in column 41, lines 25-35 which state: "In some embodiments the controller may operate to provide the merchant user with messages prompting the user to indicate the number and denomination of notes they wish to receive. This may be valuable to a merchant user who requires particular denominations of notes from the machine to carry out the efficient operation of their business, such as for making change. Various approaches to presenting merchant users with withdrawal options may be provided in embodiments of the invention through programming of a controller which controls operation of the machine." Thus there is no teaching, description, or suggestion of the note acceptor-dispenser validator system that accepts a dispense change instruction and dispenses notes and coins as change element of claim 26.

#### **4. Claim 27**

Claim 27 is directed to a vending machine comprising:

a host machine for the automated sale of commercial products, said host machine including a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing of, notes and coins as change based on the communication with said host processor, wherein said

acceptor-dispenser validator system is mounted in said housing, and said note acceptor-dispenser validator system includes;

a note validator for receiving notes and sensing data identifying the type and condition of the received notes;

a note box to hold notes received by said note validator;

a note hopper to temporarily hold pre-selected characteristic notes received by said note validator, said notes being available to be subsequently dispensed by said note acceptor-dispenser validator system; and

a transportation unit for transporting received notes from said note validator to one of said note box and said note hopper and for transporting notes from said note hopper out through said note validator in response to an instruction.

**(a) Examiner's Rejection of Claim 27**

The Examiner has given the same reasons for the rejections of claims 26-30 and those rejections are noted above in the discussion of claim 26.

**(b) Legal Standard for an Obviousness Rejection**

To establish obviousness, the prior art reference must teach or suggest all the claim limitations and it must be obvious to a person of ordinary skill in the art to combine the references. As the Supreme Court recently phrased the issue: "[t]he proper question to have asked was whether a designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading" the primary reference with a something from the secondary reference. *KSR Int. Inc. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007); *see also* M.P.E.P. § 2143 (requiring some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings). Under the MPEP test and the pre-*KSR* Federal Circuit standard, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

**(c) The combination of Ramachandran and Katou does not teach, describe, or suggest each claim element of claim 27.**

Initially, Applicant disagrees with the Examiner's characterization of Ramachandran as intended to be used in a combination ATM/vending machine that dispenses merchandise. The Examiner indicates: "Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59..." the Abstract of Ramachandran does not discuss vending machines at all, it instead makes clear that Ramachandran is directed to an ATM machine "of the recycling currency type". The Abstract states:

"The invention relates to an automated transaction machine of the recycling currency type. The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The automated transaction machine includes a chest portion and a top hat portion. The portions have a front side and a rear side. The rear side of the machine is primarily intended for use by the merchant. The front side of the machine is primarily intended for use by a customer. The merchant side of the chest portion includes an inlet opening for inserting cash and an outlet opening for dispensing cash. The customer side of the chest portion also includes an outlet opening for dispensing cash. The top hat portion includes a separate user interface on the merchant side and a separate user interface on the customer side. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion."

Similarly, the text of the specification identified by the Examiner does not mention vending machines, Ramachandran at col. 2, lines 45-59; recites:

"Recently automated transaction machines have been developed that are capable of "recycling" currency. Such machines are capable of accepting currency notes from a user or operator, and determining the genuineness and particular type of each note. Such machines selectively store the deposited notes in locations within the machine. At a later time when the same or another user requests a dispense of notes, the machine dispenses the previously deposited notes to the user. While such machines have the capability of having the note supplies replenished without accessing the interior of the machine, such machines are

generally complex and expensive. The installation of such a machine would generally not be cost justified in situations where relatively low cost, cash dispense only type machines are currently used."

Although the sections referenced by the Examiner do not teach, describe, or suggest vending machines, there is some discussion of vending machines in Ramachandran. However, the discussion does not teach, describe, or suggest the system of the claim that includes the operation of the machine in dispensing change and commercial products. For example, the background portion of the Ramachandran reference addresses multiple problems associated with having ATM machines incorporated into vending machines. In identifying multiple limitations and associated problems, Ramachandran never mentions or addresses the issue of how to interact with the vending machine so as to allow dispensing of currency, or in particular selected received currency, to recycle as change for vending transactions. After discussing the limitations, Ramachandran addresses the problem he seeks to resolve, stating at col. 3:43-52:

"Thus there exists a need for an automated transaction machine that is inexpensive to produce and operate, but that is also highly reliable. There further exists a need for an automated transaction machine that is capable of being replenished with currency notes or other sheets of value without having to access the note storage areas in the interior of the machine. There further exists a need for an automated transaction machine which includes a note receiving and dispensing component that adds only limited cost to the production and operation of the machine."

The system of Ramachandran is thus at most merely directed to the addition of an ATM to a vending machine so that two separate functions are provided in one location. However, there is no teaching, description, or suggestion in Ramachandran of using the note acceptor-dispenser mechanism of the ATM as part of the mechanism by which a commercial product is purchased and change is provided. As noted in col. 4 line 63 through col. 5, line 4 of Ramachandran which states: "The foregoing objects are accomplished in an exemplary embodiment by an automated transaction machine. The automated transaction machine may be a machine whose primary function is the receipt and/or dispensing of sheets such as currency notes. Alternatively the automated transaction machine may be associated with a primary function such as the vending of motor fuel, lottery tickets, transit tokens or other transactions and

may include the dispensing and/or receipt of sheets having value, such as currency.” All subsequent description in Ramachandran are for the operation of the ATM portion of the system in typical ATM fashion, i.e. the deposit and/or withdrawal of currency by a customer or merchant. There is no teaching, description, or suggestion of using the mechanism of Ramachandran itself for accepting bills and providing products and, more importantly to the present invention, there is no discussion of providing selected currency for recycling as change for a vending transaction. Rather, the vending described in Ramachandran is a supplementary function that uses other mechanisms than are described in the device of Ramachandran.

With the foregoing limitations of Ramachandran in mind, applicant submits that not only would the proposed combination of components from Katou into the device of Ramachandran not be obvious, but significantly that the references (either alone or in combination) do not even teach all of the elements of the claims. The Examiner contends that the temporary storage hopper (40) of Katou reads on this element. Applicant respectfully disagrees. The storage hopper of Katou is not equivalent to, nor does it teach, describe, or suggest the note hopper of claim 27. As stated in paragraph 79 of Katou: “The temporary storage box 40 has a function of successively accepting bills deposited from the deposit/withdrawal port 20 and kind-settled by the bill discriminating unit 30 at the time of deposit transaction, reserving them temporarily until the transaction is materialized, and successively discharging the bills after the materialization of the transaction.”

As is clear from the description in Katou, the temporary storage unit is very different from the note hopper of claim 27. First of all, the temporary storage unit 40 of Katou accepts all bills that are deposited into the ATM of Katou. The temporary storage unit 40 of Katou holds all bills temporarily until a transaction is completed and then disgorges them in entirety. This is in contrast to the note hopper of claim 27 in which a “pre-selected characteristic notes” are received and stored and available for dispensing in response to an instruction from the validator processor. Because the combination cited by the Examiner does not include all elements of the cited claim, the combination cannot teach, describe, or suggest the invention of claim 27.

The cited combination also lacks the note acceptor-dispenser validator system that accepts a dispense change instruction and dispenses notes and coins as change as called out in claim 27. Katou is an ATM machine and therefore does not make change at all. There is no

change in an ATM transaction since there is no product purchased or provided. Similarly, the Ramachandran reference has no teaching, description, or suggestion of making change including bills and coins. In fact, the Ramachandran reference does not mention coins at all. The only mention of change in Ramachandran is in column 41, lines 25-35 which state: "In some embodiments the controller may operate to provide the merchant user with messages prompting the user to indicate the number and denomination of notes they wish to receive. This may be valuable to a merchant user who requires particular denominations of notes from the machine to carry out the efficient operation of their business, such as for making change. Various approaches to presenting merchant users with withdrawal options may be provided in embodiments of the invention through programming of a controller which controls operation of the machine." Thus there is no teaching, description, or suggestion of this element of claim 27.

## **5. Claim 28**

Claim 28 is directed to a vending machine comprising:

- a host machine for the automated sale of commercial products, said host machine having a host processor, and a housing;

- a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

- said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing notes and coins as change based on communications with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, and said note acceptor-dispenser validator system further comprises;

- a note validator having an opening for receiving notes;

- a note storage area to store notes received by said note validator when said notes are characterized by said note validator as meeting pre-selected characteristics; and

a transportation unit for transporting notes from said note validator to said note storage area and for dispensing notes from said note storage area through said opening in said note validator in response to an instruction.

**(a) Examiner's Rejection of Claim 28**

The Examiner has given the same reasons for the rejections of claims 26-30 and those rejections are noted above in the discussion of claim 26.

**(b) Legal Standard for an Obviousness Rejection**

To establish obviousness, the prior art reference must teach or suggest all the claim limitations and it must be obvious to a person of ordinary skill in the art to combine the references. As the Supreme Court recently phrased the issue: "[t]he proper question to have asked was whether a designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading" the primary reference with a something from the secondary reference. *KSR Int. Inc. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007); *see also* M.P.E.P. § 2143 (requiring some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings). Under the MPEP test and the pre-*KSR* Federal Circuit standard, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

**(c) The combination of Ramachandran and Katou does not teach, describe, or suggest each claim element of claim 28.**

Initially, Applicant disagrees with the Examiner's characterization of Ramachandran as intended to be used in a combination ATM/vending machine that dispenses merchandise. The Examiner indicates: "Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59..." the Abstract of Ramachandran does not discuss vending machines at all, it instead makes clear that Ramachandran is directed to an ATM machine "of the recycling currency type". The Abstract states:

"The invention relates to an automated transaction machine of the recycling currency type. The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The automated transaction machine includes a chest portion and a top hat portion. The portions have a front side and a rear side. The rear side of the machine is primarily intended for use by the merchant. The front side of the machine is primarily intended for use by a customer. The merchant side of the chest portion includes an inlet opening for inserting cash and an outlet opening for dispensing cash. The customer side of the chest portion also includes an outlet opening for dispensing cash. The top hat portion includes a separate user interface on the merchant side and a separate user interface on the customer side. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion."

Similarly, the text of the specification identified by the Examiner does not mention vending machines, Ramachandran at col. 2, lines 45-59; recites:

"Recently automated transaction machines have been developed that are capable of "recycling" currency. Such machines are capable of accepting currency notes from a user or operator, and determining the genuineness and particular type of each note. Such machines selectively store the deposited notes in locations within the machine. At a later time when the same or another user requests a dispense of notes, the machine dispenses the previously deposited notes to the user. While such machines have the capability of having the note supplies replenished without accessing the interior of the machine, such machines are generally complex and expensive. The installation of such a machine would generally not be cost justified in situations where relatively low cost, cash dispense only type machines are currently used."

Although the sections referenced by the Examiner do not teach, describe, or suggest vending machines, there is some discussion of vending machines in Ramachandran. However, the discussion does not teach, describe, or suggest the system of the claim that includes the operation of the machine in dispensing change and commercial products. For example, the background portion of the Ramachandran reference addresses multiple problems associated with having ATM machines incorporated into vending machines. In identifying multiple limitations and associated problems, Ramachandran never mentions or addresses the issue of how to interact with the vending machine so as to allow dispensing of currency, or in particular selected received



currency, to recycle as change for vending transactions. After discussing the limitations, Ramachandran addresses the problem he seeks to resolve, stating at col. 3:43-52:

“Thus there exists a need for an automated transaction machine that is inexpensive to produce and operate, but that is also highly reliable. There further exists a need for an automated transaction machine that is capable of being replenished with currency notes or other sheets of value without having to access the note storage areas in the interior of the machine. There further exists a need for an automated transaction machine which includes a note receiving and dispensing component that adds only limited cost to the production and operation of the machine.”

The system of Ramachandran is thus at most merely directed to the addition of an ATM to a vending machine so that two separate functions are provided in one location. However, there is no teaching, description, or suggestion in Ramachandran of using the note acceptor-dispenser mechanism of the ATM as part of the mechanism by which a commercial product is purchased and change is provided. As noted in col. 4 line 63 through col. 5, line 4 of Ramachandran which states: “The foregoing objects are accomplished in an exemplary embodiment by an automated transaction machine. The automated transaction machine may be a machine whose primary function is the receipt and/or dispensing of sheets such as currency notes. Alternatively the automated transaction machine may be associated with a primary function such as the vending of motor fuel, lottery tickets, transit tokens or other transactions and may include the dispensing and/or receipt of sheets having value, such as currency.” All subsequent description in Ramachandran are for the operation of the ATM portion of the system in typical ATM fashion, i.e. the deposit and/or withdrawal of currency by a customer or merchant. There is no teaching, description, or suggestion of using the mechanism of Ramachandran itself for accepting bills and providing products and, more importantly to the present invention, there is no discussion of providing selected currency for recycling as change for a vending transaction. Rather, the vending described in Ramachandran is a supplementary function that uses other mechanisms than are described in the device of Ramachandran.

With the foregoing limitations of Ramachandran in mind, applicant submits that not only would the proposed combination of components from Katou into the device of Ramachandran not be obvious, but significantly that the references (either alone or in combination) do not even

teach all of the elements of the claims. For example, claim 28 recites the limitation of a note storage area to store notes received by the note validator when the notes are characterized by the note validator as meeting pre-selected characteristics, the notes being dispensed by the note acceptor-dispenser validator system in response to an instruction. The Examiner fails to make an explicit connection between the note storage area of claim 28 and elements in the cited combination. This failure to specifically call out the elements of the combination that read on the claimed system is such that the combination does not teach, describe, or suggest each claim element and the claim is therefore allowable.

The Examiner might be contending that the note box (60, 80, and 81) of Katou and the temporary storage hopper (40) of Katou reads on the element of a note storage area. Applicant respectfully disagrees. The storage hopper of Katou is not equivalent to, nor does it teach, describe, or suggest the note storage area of claim 28. As stated in paragraph 79 of Katou: "The temporary storage box 40 has a function of successively accepting bills deposited from the deposit/withdrawal port 20 and kind-settled by the bill discriminating unit 30 at the time of deposit transaction, reserving them temporarily until the transaction is materialized, and successively discharging the bills after the materialization of the transaction."

As is clear from the description in Katou, the temporary storage unit is very different from the note storage area of claim 28. First of all, the temporary storage unit 40 of Katou accepts all bills that are deposited into the ATM of Katou. The temporary storage unit 40 of Katou holds all bills temporarily until a transaction is completed and then disgorges them in entirety. This is in contrast to the note hopper of claim 28 in which a "pre-selected characteristic notes" are received and stored and available for dispensing in response to an instruction from the validator processor. Because the combination cited by the Examiner does not include all elements of the cited claim, the combination cannot teach, describe, or suggest the invention of claim 28.

The cited combination also lacks the note acceptor-dispenser validator system that accepts a dispense change instruction and dispenses notes and coins as change as called out in claim 28. Katou is an ATM machine and therefore does not make change at all. There is no change in an ATM transaction since there is no product purchased or provided. Similarly, the Ramachandran reference has no teaching, description, or suggestion of making change including

bills and coins. In fact, the Ramachandran reference does not mention coins at all. The only mention of change in Ramachandran is in column 41, lines 25-35 which state: "In some embodiments the controller may operate to provide the merchant user with messages prompting the user to indicate the number and denomination of notes they wish to receive. This may be valuable to a merchant user who requires particular denominations of notes from the machine to carry out the efficient operation of their business, such as for making change. Various approaches to presenting merchant users with withdrawal options may be provided in embodiments of the invention through programming of a controller which controls operation of the machine." Thus there is no teaching, description, or suggestion of this element of claim 28.

#### **6. Claim 29**

Claim 29 is directed to a vending machine for dispensing product, the vending machine comprising:

- a host machine for the dispensing of commercial products, said host machine including a host processor, and a housing;

- a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

- said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing notes and coins as change based on communications with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, and said note acceptor-dispenser validator system further comprises:

- a note validator having an opening for receiving notes and a validator head for sensing data relating to the authenticity, denomination, and type of note received by said note validator, said note validator generating signals corresponding to the sensed data for each received note;

a validator processor for receiving and comparing said sensed data signals with stored data to validate said notes and generate a signal signifying receipt and the value of said note to said host processor;

a note box configured to receive and hold notes received by said note validator;

a note hopper for receiving and storing pre-selected characteristic notes received by said note validator; and

a transportation unit for directing validated notes to one of said note box and said note hopper for dispensing notes from said note hopper through said opening in said note validator in response to a dispense signal.

**(a) Examiner's Rejection of Claim 29**

The Examiner has given the same reasons for the rejections of claims 26-30 and those rejections are noted above in the discussion of claim 26.

**(b) Legal Standard for an Obviousness Rejection**

To establish obviousness, the prior art reference must teach or suggest all the claim limitations and it must be obvious to a person of ordinary skill in the art to combine the references. As the Supreme Court recently phrased the issue: "[t]he proper question to have asked was whether a designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading" the primary reference with a something from the secondary reference. *KSR Int. Inc. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007); *see also* M.P.E.P. § 2143 (requiring some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings). Under the MPEP test and the pre-*KSR* Federal Circuit standard, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

**(c) The combination of Ramachandran and Katou does not teach, describe, or suggest each claim element of claim 29.**

Initially, Applicant disagrees with the Examiner's characterization of Ramachandran as intended to be used in a combination ATM/vending machine that dispenses merchandise. The Examiner indicates: "Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59..." the Abstract of Ramachandran does not discuss vending machines at all, it instead makes clear that Ramachandran is directed to an ATM machine "of the recycling currency type". The Abstract states:

"The invention relates to an automated transaction machine of the recycling currency type. The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The automated transaction machine includes a chest portion and a top hat portion. The portions have a front side and a rear side. The rear side of the machine is primarily intended for use by the merchant. The front side of the machine is primarily intended for use by a customer. The merchant side of the chest portion includes an inlet opening for inserting cash and an outlet opening for dispensing cash. The customer side of the chest portion also includes an outlet opening for dispensing cash. The top hat portion includes a separate user interface on the merchant side and a separate user interface on the customer side. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion."

Similarly, the text of the specification identified by the Examiner does not mention vending machines, Ramachandran at col. 2, lines 45-59; recites:

"Recently automated transaction machines have been developed that are capable of "recycling" currency. Such machines are capable of accepting currency notes from a user or operator, and determining the genuineness and particular type of each note. Such machines selectively store the deposited notes in locations within the machine. At a later time when the same or another user requests a dispense of notes, the machine dispenses the previously deposited notes to the user. While such machines have the capability of having the note supplies replenished without accessing the interior of the machine, such machines are

generally complex and expensive. The installation of such a machine would generally not be cost justified in situations where relatively low cost, cash dispense only type machines are currently used.”

Although the sections referenced by the Examiner do not teach, describe, or suggest vending machines, there is some discussion of vending machines in Ramachandran. However, the discussion does not teach, describe, or suggest the system of the claim that includes the operation of the machine in dispensing change and commercial products. For example, the background portion of the Ramachandran reference addresses multiple problems associated with having ATM machines incorporated into vending machines. In identifying multiple limitations and associated problems, Ramachandran never mentions or addresses the issue of how to interact with the vending machine so as to allow dispensing of currency, or in particular selected received currency, to recycle as change for vending transactions. After discussing the limitations, Ramachandran addresses the problem he seeks to resolve, stating at col. 3:43-52:

“Thus there exists a need for an automated transaction machine that is inexpensive to produce and operate, but that is also highly reliable. There further exists a need for an automated transaction machine that is capable of being replenished with currency notes or other sheets of value without having to access the note storage areas in the interior of the machine. There further exists a need for an automated transaction machine which includes a note receiving and dispensing component that adds only limited cost to the production and operation of the machine.”

The system of Ramachandran is thus at most merely directed to the addition of an ATM to a vending machine so that two separate functions are provided in one location. However, there is no teaching, description, or suggestion in Ramachandran of using the note acceptor-dispenser mechanism of the ATM as part of the mechanism by which a commercial product is purchased and change is provided. As noted in col. 4 line 63 through col. 5, line 4 of Ramachandran which states: “The foregoing objects are accomplished in an exemplary embodiment by an automated transaction machine. The automated transaction machine may be a machine whose primary function is the receipt and/or dispensing of sheets such as currency notes. Alternatively the automated transaction machine may be associated with a primary function such as the vending of motor fuel, lottery tickets, transit tokens or other transactions and

may include the dispensing and/or receipt of sheets having value, such as currency.” All subsequent description in Ramachandran are for the operation of the ATM portion of the system in typical ATM fashion, i.e. the deposit and/or withdrawal of currency by a customer or merchant. There is no teaching, description, or suggestion of using the mechanism of Ramachandran itself for accepting bills and providing products and, more importantly to the present invention, there is no discussion of providing selected currency for recycling as change for a vending transaction. Rather, the vending described in Ramachandran is a supplementary function that uses other mechanisms than are described in the device of Ramachandran.

With the foregoing limitations of Ramachandran in mind, applicant submits that not only would the proposed combination of components from Katou into the device of Ramachandran not be obvious, but significantly that the references (either alone or in combination) do not even teach all of the elements of the claims. For Example, claim 29 recites the limitation of a note hopper for receiving and storing pre-selected characteristic notes received by the note validator, the notes being available to be subsequently dispensed from the note hopper in response to a dispense signal. The Examiner contends that the temporary storage hopper (40) of Katou reads on this element. Applicant respectfully disagrees. The storage hopper of Katou is not equivalent to, nor does it teach, describe, or suggest the note hopper of claim 29. As stated in paragraph 79 of Katou: “The temporary storage box 40 has a function of successively accepting bills deposited from the deposit/withdrawal port 20 and kind-settled by the bill discriminating unit 30 at the time of deposit transaction, reserving them temporarily until the transaction is materialized, and successively discharging the bills after the materialization of the transaction.”

As is clear from the description in Katou, the temporary storage unit is very different from the note hopper of claim 29. First of all, the temporary storage unit 40 of Katou accepts all bills that are deposited into the ATM of Katou. The temporary storage unit 40 of Katou holds all bills temporarily until a transaction is completed and then disgorges them in entirety. This is in contrast to the note hopper of claim 27 in which a “pre-selected characteristic notes” are received and stored and available for dispensing in response to a dispensing instruction. Because the combination cited by the Examiner does not include all elements of the cited claim, the combination cannot teach, describe, or suggest the invention of claim 29.

The cited combination also lacks the note acceptor-dispenser validator system that accepts a dispense change instruction and dispenses notes and coins as change as called out in claim 29. Katou is an ATM machine and therefore does not make change at all. There is no change in an ATM transaction since there is no product purchased or provided. Similarly, the Ramachandran reference has no teaching, description, or suggestion of making change including bills and coins. In fact, the Ramachandran reference does not mention coins at all. The only mention of change in Ramachandran is in column 41, lines 25-35 which state: "In some embodiments the controller may operate to provide the merchant user with messages prompting the user to indicate the number and denomination of notes they wish to receive. This may be valuable to a merchant user who requires particular denominations of notes from the machine to carry out the efficient operation of their business, such as for making change. Various approaches to presenting merchant users with withdrawal options may be provided in embodiments of the invention through programming of a controller which controls operation of the machine." Thus there is no teaching, description, or suggestion of this element of claim 29.

#### **7. Claim 30**

Claim 30 is a dependent claim depending on claim 29. Therefore, 30 includes all the limitations of Claim 29 and the Board should overturn the Examiner's rejection of Claim 30 at least for the reasons expressed with respect to Claim 29 which is incorporated herein by reference.

#### **B. Claims 26-30 are not unpatentable over Ramachandran in view of Graef.**

The Examiner has rejected claims 26-30 under 35 USC 103(a) as being unpatentable over Ramachandran et al (US 6, 941,274) in view of Graef et al (US 6,315,194) *Final office action at pages 4-5*.

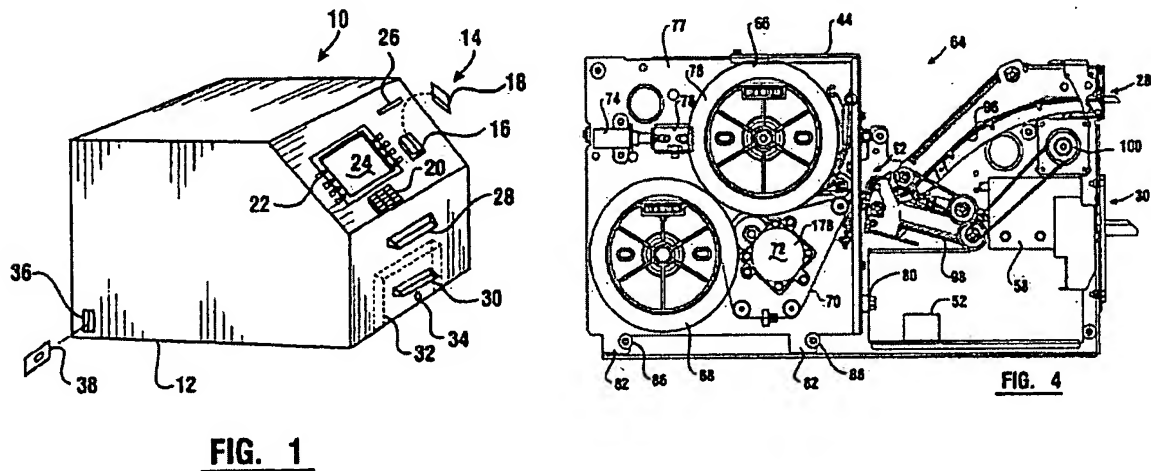
The Board should overturn this rejection because the combination of Ramachandran and Graef do not teach, describe, or suggest each and every element of independent claims 26, 27, 28, and 29 and dependent claim 30 for the reasons set forth below.



## 1. Summary of Prior Art

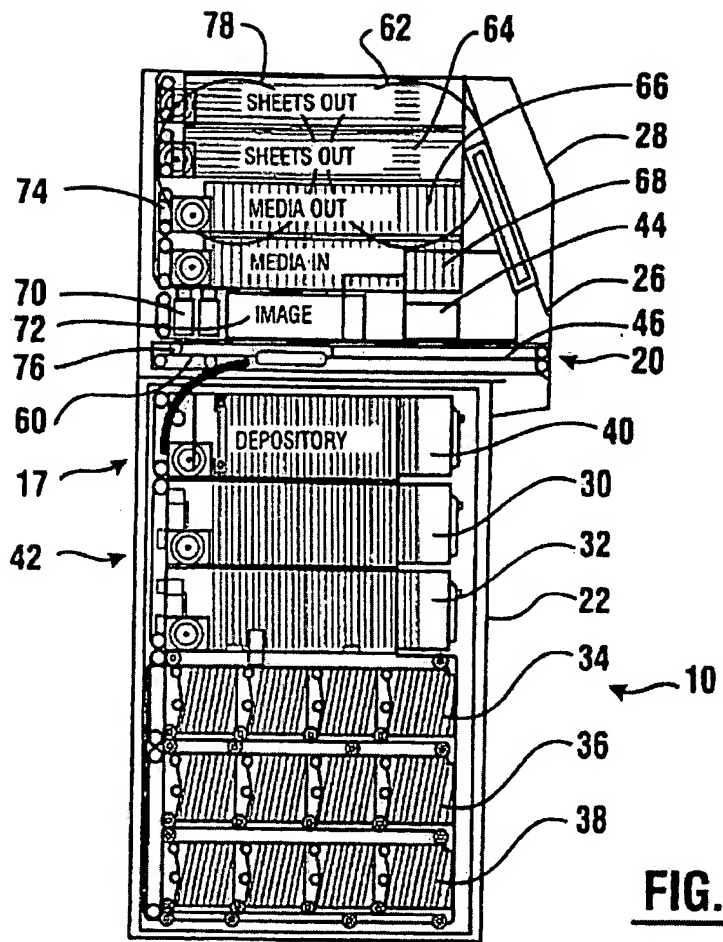
### (a) Ramachandran

Ramachandran is directed to an automated currency transaction machine capable of recycling currency (receiving and dispensing received currency). The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion. *See Abstract of Ramachandran.* The device of Ramachandran does not vend merchandise or products. Figs 1 and 4 of Ramachandran are reproduced below:

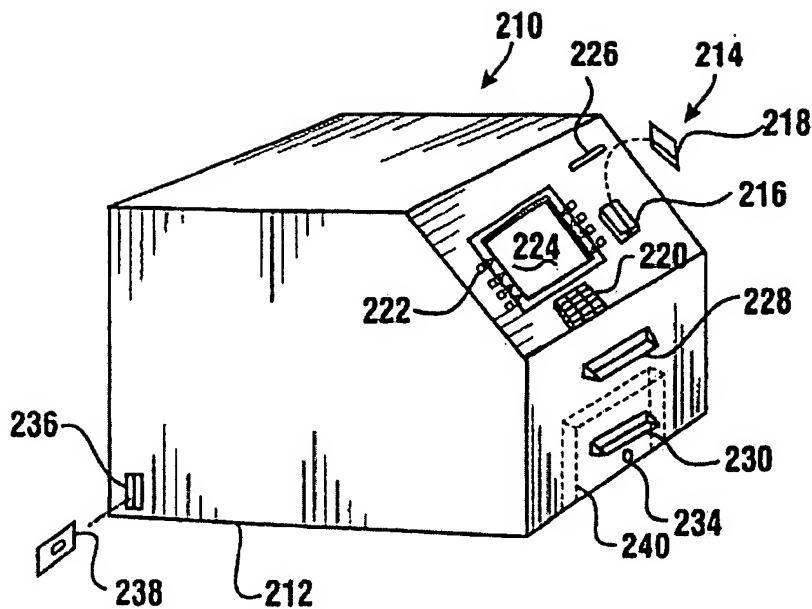


### (b) Graef

Graef is directed to an automated transaction machine that includes a sheet dispensing path verification system and method. The machine includes a sheet handling mechanism (17, 192) therein, including a sheet transport path (42). Devices for sensing and moving sheets are positioned adjacent to the transport path. *See Abstract of Graef.* Like Ramachandran, the ATM of Graef does not vend products. See Figures 3 and 7 below:



**FIG. 3**



**FIG. 7**

## 2. Combination Compared to Claimed invention

As set forth above, both of the cited references are ATM machines, they do not dispense commercial products. By contrast, the claims at issue are directed to vending machines and similar customer service devices which include an acceptor-dispenser-validator system that accepts currency notes and issues credit to the host processor to cause the dispensing of commercial products and the system receives a signal to dispense change from the host processor to cause the dispensing of notes and coins as change based upon the communication from the host processor.

## 3. Claim 26

Claim 26 is directed to a customer service device comprising:

a host machine for the vending of commercial products, said host machine including a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing of notes and coins as change based on the communication with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, said note acceptor-dispenser validator system including;

a note validator for receiving notes and sensing data relating to the authenticity, denomination, type and condition of notes received by said note validator, said note validator generating signals corresponding to the sensed data for each received note;

a validator processor for receiving and comparing said sensed data signals with stored data to validate said notes;

a note box configured to receive and hold notes received by said note validator;

a note hopper for receiving and storing up to a selected number of notes of a pre-selected denomination which are received by said note validator; and

a transportation unit for directing said notes determined to be authentic to one of said note box and said note hopper and for dispensing notes from said note hopper in response to an instruction from said validator processor.

**(a) Examiner's Rejection of Claim 26**

The Examiner rejected each of claims 26-30 as unpatentable over Ramachandran in view of Graef and gives a single argument applied to each of claims 26-30. The Examiner states that:

As described in Claims 26-30, Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59! said ATM

intended to be used in a vending machine for the purpose of providing ATM capabilities such as accepting and dispensing currency notes.

As described in Claims 26-30, Ramachandran does not expressly disclose, but Graef et al discloses a note validator (72 and 258), a validator processor (254) with memory (256) (see also Graef col. 6, lines 10-25), a note box (30, 32, 34, 36, 38 and 40), of which any of said note boxes can be used as a temporary storage hopper, a transportation unit (17, 192, 285) (see also figures 12-15), the notes being sent through validator (72 or 258) in either direction. Note that the deposit/withdrawal port (20) can be construed as the validator opening, with the entire structure (10) being construed as the validator. Note also that bill discrimination/validator unit (72 and 258) can be construed as inherently sensing actual bill pattern information for comparison with template patterns stored in memory such as (256) and as inherently determining the value of bills detected as received and dispensed by the apparatus. See also Graef, col. 14, lines 11-55.

Regarding Applicants' newly added claim language, the phrase "for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products" is considered intended use language with no patentable weight. Nonetheless, Graef highly suggests that it performs the credit/debit accounting function as described in col. 13, lines 25-35 and col. 14, lines 25-55. Note that this is how all bill handling devices operate. Graef similarly is considered to suggest a configuration to "accept a dispense-change instruction from said host processor", since this is how bill handling devices operate.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have embodied Graef's note handling mechanism in place of Ramachandran note handling mechanism for use in a combination ATM/vending machine that dispenses merchandise.

The suggestion/motivation to do so would have been for the purpose of providing a more reliable note handling device for vending machines which does not cause bill jams and maintains the operability of the sheet path. See Graef, col. 2, lines 5-30 and 40-50. Further, one ordinarily skilled in the art would have recognized the benefit of combining an ATM and vending machine because customers drawn to the vending machine to obtain money through the ATM device of the vending machine may be more willing to make impulsive purchases from the vending machine portion of the apparatus due to the availability of

currency, thereby resulting in increased sales of vended goods as compared to a free-standing vending machine. *See Final Office Action Pages 4-5.*

**(b) Legal Standard for an Obviousness Rejection**

To establish obviousness, the prior art reference must teach or suggest all the claim limitations and it must be obvious to a person of ordinary skill in the art to combine the references. As the Supreme Court recently phrased the issue: “[t]he proper question to have asked was whether a designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading” the primary reference with a something from the secondary reference. *KSR Int. Inc. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007); *see also* M.P.E.P. § 2143 (requiring some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings). Under the MPEP test and the pre-*KSR* Federal Circuit standard, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

**(c) The combination of Ramachandran and Graef does not teach, describe, or suggest each claim element of claim 26**

Applicant disagrees with the Examiner’s characterization of Ramachandran as intended to be used in a combination ATM/vending machine that dispenses merchandise. The Examiner indicates: “Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59...” the Abstract of Ramachandran does not discuss vending machines at all, it instead makes clear that Ramachandran is directed to an ATM machine “of the recycling currency type”. The Abstract states:

“The invention relates to an automated transaction machine of the recycling currency type. The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The automated transaction machine includes a chest portion and a top hat portion. The portions have a front side and a rear side. The rear side of the machine is primarily intended for use by the merchant. The front side of the machine is primarily intended for use by a customer. The merchant side of the chest

portion includes an inlet opening for inserting cash and an outlet opening for dispensing cash. The customer side of the chest portion also includes an outlet opening for dispensing cash. The top hat portion includes a separate user interface on the merchant side and a separate user interface on the customer side. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion."

Similarly, the text of the specification identified by the Examiner does not mention vending machines, Ramachandran at col. 2, lines 45-59; recites:

"Recently automated transaction machines have been developed that are capable of "recycling" currency. Such machines are capable of accepting currency notes from a user or operator, and determining the genuineness and particular type of each note. Such machines selectively store the deposited notes in locations within the machine. At a later time when the same or another user requests a dispense of notes, the machine dispenses the previously deposited notes to the user. While such machines have the capability of having the note supplies replenished without accessing the interior of the machine, such machines are generally complex and expensive. The installation of such a machine would generally not be cost justified in situations where relatively low cost, cash dispense only type machines are currently used."

Although the sections referenced by the Examiner do not teach, describe, or suggest vending machines, there is some discussion of vending machines in Ramachandran. However, the discussion does not teach, describe, or suggest the system of the claim that includes the operation of the machine in dispensing change and commercial products. For example, the background portion of the Ramachandran reference addresses multiple problems associated with having ATM machines incorporated into vending machines. In identifying multiple limitations and associated problems, Ramachandran never mentions or addresses the issue of how to interact with the vending machine so as to allow dispensing of currency, or in particular selected received currency, to recycle as change for vending transactions. After discussing the limitations, Ramachandran addresses the problem he seeks to resolve, stating at col. 3:43-52:

32, 34, 36, 38, and 40 of Katou read on this element. Applicant respectfully disagrees. Note box 40 of Graef is for receiving envelopes (Graef column 5, lines 44-50) and cannot teach, describe, or suggest the note hopper of the claim that both receives and dispenses notes. Note boxes 30 and 32 are in fact currency dispensers and do not receive notes validated by the note validator. These boxes 30 and 32 are loaded via canisters inserted in the machine and do not receive notes that pass into the machine via the note validator (Graef column 5, lines 9-24). Thus, note boxes 30 and 32 cannot teach, describe, or suggest the note hopper of the claim that receives notes that have been received by the note validator. Finally, note boxes 34, 36, and 38 are described as receiving and storing sheets in selected storage areas as well as selectively delivering sheets from the various storage areas (Graef column 5, lines 36-39). There is no teaching, description, or suggestion in Graef that the note boxes 34, 36, and 38 dispense notes in response to an instruction from the validator processor. Thus the cited combination does not teach this element of the claim.

As is clear from the description in Graef, the note boxes 34, 36, and 38 are very different from the note hopper of the claim. First of all, there is no teaching as to the types of notes that the note boxes 34, 36, and 38 are to receive. This is in contrast to the note hopper of the claim in which a "notes of a pre-selected denomination" are received and stored and dispensed in response to an instruction from the validator processor. Because the combination cited by the Examiner does not include all elements of the cited claim, the combination cannot teach, describe, or suggest the invention of the claim.

The cited combination also lacks the note acceptor-dispenser validator system that accepts a dispense change instruction and dispenses notes and coins as change as called out in the claim. Graef is an ATM machine directed to confirming that the transportation path is clear and operational. There is not discussion in Graef of making change for a transaction. There is no change in an ATM transaction since there is no product purchased or provided. Similarly, the Ramachandran reference has no teaching, description, or suggestion of making change including bills and coins. In fact, the Ramachandran reference does not mention coins at all. The only mention of change in Ramachandran is in column 41, lines 25-35 which state: "In some embodiments the controller may operate to provide the merchant user with messages prompting the user to indicate the number and denomination of notes they wish to receive. This may be valuable to a merchant user who requires particular denominations of notes from the machine to



"Thus there exists a need for an automated transaction machine that is inexpensive to produce and operate, but that is also highly reliable. There further exists a need for an automated transaction machine that is capable of being replenished with currency notes or other sheets of value without having to access the note storage areas in the interior of the machine. There further exists a need for an automated transaction machine which includes a note receiving and dispensing component that adds only limited cost to the production and operation of the machine."

The system of Ramachandran is thus at most merely directed to the addition of an ATM to a vending machine so that two separate functions are provided in one location. However, there is no teaching, description, or suggestion in Ramachandran of using the note acceptor-dispenser mechanism of the ATM as part of the mechanism by which a commercial product is purchased and change is provided. As noted in col. 4 line 63 through col. 5, line 4 of Ramachandran which states: "The foregoing objects are accomplished in an exemplary embodiment by an automated transaction machine. The automated transaction machine may be a machine whose primary function is the receipt and/or dispensing of sheets such as currency notes. Alternatively the automated transaction machine may be associated with a primary function such as the vending of motor fuel, lottery tickets, transit tokens or other transactions and may include the dispensing and/or receipt of sheets having value, such as currency." All subsequent description in Ramachandran are for the operation of the ATM portion of the system in typical ATM fashion, i.e. the deposit and/or withdrawal of currency by a customer or merchant. There is no teaching, description, or suggestion of using the mechanism of Ramachandran itself for accepting bills and providing products and, more importantly to the present invention, there is no discussion of providing selected currency for recycling as change for a vending transaction. Rather, the vending described in Ramachandran is a supplementary function that uses other mechanisms than are described in the device of Ramachandran.

With the foregoing limitations of Ramachandran in mind, applicant submits that not only would the proposed combination of components from Graef into the device of Ramachandran not be obvious, but significantly that the references (either alone or in combination) do not even teach all of the elements of the claims. For example, claim 26 recites the limitation of a note hopper for receiving and storing up to a selected number of notes of a pre-selected denomination which are received by the note validator. The Examiner contends that any of the note boxes 30,

carry out the efficient operation of their business, such as for making change. Various approaches to presenting merchant users with withdrawal options may be provided in embodiments of the invention through programming of a controller which controls operation of the machine.” Thus there is no teaching, description, or suggestion of this element of the claim.

#### 4. Claim 27

Claim 27 is directed to a vending machine comprising:

a host machine for the automated sale of commercial products, said host machine including a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing of, notes and coins as change based on the communication with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, and said note acceptor-dispenser validator system includes;

a note validator for receiving notes and sensing data identifying the type and condition of the received notes;

a note box to hold notes received by said note validator;

a note hopper to temporarily hold pre-selected characteristic notes received by said note validator, said notes being available to be subsequently dispensed by said note acceptor-dispenser validator system; and

a transportation unit for transporting received notes from said note validator to one of said note box and said note hopper and for transporting notes from said note hopper out through said note validator in response to an instruction.

**(a) Examiner's Rejection of Claim 27**

The Examiner has given the same reasons for the rejections of claims 26-30 and those rejections are noted above in the discussion of claim 26.

**(b) Legal Standard for an Obviousness Rejection**

To establish obviousness, the prior art reference must teach or suggest all the claim limitations and it must be obvious to a person of ordinary skill in the art to combine the references. As the Supreme Court recently phrased the issue: "[t]he proper question to have asked was whether a designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading" the primary reference with a something from the secondary reference. *KSR Int. Inc. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007); *see also* M.P.E.P. § 2143 (requiring some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings). Under the MPEP test and the pre-*KSR* Federal Circuit standard, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

**(c) The combination of Ramachandran and Graef does not teach, describe, or suggest each claim element of claim 27.**

Applicant disagrees with the Examiner's characterization of Ramachandran as intended to be used in a combination ATM/vending machine that dispenses merchandise. The Examiner indicates: "Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59..." the Abstract of Ramachandran does not discuss vending machines at all, it instead makes clear that Ramachandran is directed to an ATM machine "of the recycling currency type". The Abstract states:

"The invention relates to an automated transaction machine of the recycling currency type. The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The automated transaction machine includes a chest portion and a top hat portion. The portions have a front side and a rear side. The rear side of the machine is primarily intended for use by the merchant. The

front side of the machine is primarily intended for use by a customer. The merchant side of the chest portion includes an inlet opening for inserting cash and an outlet opening for dispensing cash. The customer side of the chest portion also includes an outlet opening for dispensing cash. The top hat portion includes a separate user interface on the merchant side and a separate user interface on the customer side. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion."

Similarly, the text of the specification identified by the Examiner does not mention vending machines, Ramachandran at col. 2, lines 45-59; recites:

"Recently automated transaction machines have been developed that are capable of "recycling" currency. Such machines are capable of accepting currency notes from a user or operator, and determining the genuineness and particular type of each note. Such machines selectively store the deposited notes in locations within the machine. At a later time when the same or another user requests a dispense of notes, the machine dispenses the previously deposited notes to the user. While such machines have the capability of having the note supplies replenished without accessing the interior of the machine, such machines are generally complex and expensive. The installation of such a machine would generally not be cost justified in situations where relatively low cost, cash dispense only type machines are currently used."

Although the sections referenced by the Examiner do not teach, describe, or suggest vending machines, there is some discussion of vending machines in Ramachandran. However, the discussion does not teach, describe, or suggest the system of the claim that includes the operation of the machine in dispensing change and commercial products. For example, the background portion of the Ramachandran reference addresses multiple problems associated with having ATM machines incorporated into vending machines. In identifying multiple limitations and associated problems, Ramachandran never mentions or addresses the issue of how to interact with the vending machine so as to allow dispensing of currency, or in particular selected received currency, to recycle as change for vending transactions. After discussing the limitations, Ramachandran addresses the problem he seeks to resolve, stating at col. 3:43-52:

"Thus there exists a need for an automated transaction machine that is inexpensive to produce and operate, but that is also highly reliable. There further exists a need for an automated transaction machine that is capable of being replenished with currency notes or other sheets of value without having to access the note storage areas in the interior of the machine. There further exists a need for an automated transaction machine which includes a note receiving and dispensing component that adds only limited cost to the production and operation of the machine."

The system of Ramachandran is thus at most merely directed to the addition of an ATM to a vending machine so that two separate functions are provided in one location. However, there is no teaching, description, or suggestion in Ramachandran of using the note acceptor-dispenser mechanism of the ATM as part of the mechanism by which a commercial product is purchased and change is provided. As noted in col. 4 line 63 through col. 5, line 4 of Ramachandran which states: "The foregoing objects are accomplished in an exemplary embodiment by an automated transaction machine. The automated transaction machine may be a machine whose primary function is the receipt and/or dispensing of sheets such as currency notes. Alternatively the automated transaction machine may be associated with a primary function such as the vending of motor fuel, lottery tickets, transit tokens or other transactions and may include the dispensing and/or receipt of sheets having value, such as currency." All subsequent description in Ramachandran are for the operation of the ATM portion of the system in typical ATM fashion, i.e. the deposit and/or withdrawal of currency by a customer or merchant. There is no teaching, description, or suggestion of using the mechanism of Ramachandran itself for accepting bills and providing products and, more importantly to the present invention, there is no discussion of providing selected currency for recycling as change for a vending transaction. Rather, the vending described in Ramachandran is a supplementary function that uses other mechanisms than are described in the device of Ramachandran.

With the foregoing limitations of Ramachandran in mind, applicant submits that not only would the proposed combination of components from Graef into the device of Ramachandran not be obvious, but significantly that the references (either alone or in combination) do not even teach all of the elements of the claims. For example, claim 27 recites the limitation of a note hopper to temporarily hold pre-selected characteristic notes received by the note validator, the notes being available to be subsequently dispensed by the note acceptor-dispenser validator

system. The Examiner contends that any of the note boxes 30, 32, 34, 36, 38, and 40 of Katou read on this element. Applicant respectfully disagrees. Note box 40 of Graef is for receiving envelopes (Graef column 5, lines 44-50) and cannot teach, describe, or suggest the note hopper of the claim that both receives and dispenses notes. Note boxes 30 and 32 are in fact currency dispensers and do not receive notes validated by the note validator. These boxes 30 and 32 are loaded via canisters inserted in the machine and do not receive notes that pass into the machine via the note validator (Graef column 5, lines 9-24). Thus, note boxes 30 and 32 cannot teach, describe, or suggest the note hopper of the claim that receives notes that have been received by the note validator. Finally, note boxes 34, 36, and 38 are described as receiving and storing sheets in selected storage areas as well as selectively delivering sheets from the various storage areas (Graef column 5, lines 36-39). There is no teaching, description, or suggestion in Graef that the note boxes 34, 36, and 38 dispense notes in response to an instruction from the validator processor. Thus the cited combination does not teach this element of the claim.

As is clear from the description in Graef, the note boxes 34, 36, and 38 are very different from the note hopper of the claim. First of all, there is no teaching as to the types of notes that the note boxes 34, 36, and 38 are to receive. This is in contrast to the note hopper of the claim in which a "notes of a pre-selected denomination" are received and stored and dispensed in response to an instruction from the validator processor. Because the combination cited by the Examiner does not include all elements of the cited claim, the combination cannot teach, describe, or suggest the invention of the claim.

The cited combination also lacks the note acceptor-dispenser validator system that accepts a dispense change instruction and dispenses notes and coins as change as called out in the claim. Graef is an ATM machine directed to confirming that the transportation path is clear and operational. There is not discussion in Graef of making change for a transaction. There is no change in an ATM transaction since there is no product purchased or provided. Similarly, the Ramachandran reference has no teaching, description, or suggestion of making change including bills and coins. In fact, the Ramachandran reference does not mention coins at all. The only mention of change in Ramachandran is in column 41, lines 25-35 which state: "In some embodiments the controller may operate to provide the merchant user with messages prompting the user to indicate the number and denomination of notes they wish to receive. This may be valuable to a merchant user who requires particular denominations of notes from the machine to

carry out the efficient operation of their business, such as for making change. Various approaches to presenting merchant users with withdrawal options may be provided in embodiments of the invention through programming of a controller which controls operation of the machine.” Thus there is no teaching, description, or suggestion of this element of the claim.

## **5. Claim 28**

Claim 28 is directed to a vending machine comprising:

a host machine for the automated sale of commercial products, said host machine having a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing notes and coins as change based on communications with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, and said note acceptor-dispenser validator system further comprises;

a note validator having an opening for receiving notes;

a note storage area to store notes received by said note validator when said notes are characterized by said note validator as meeting pre-selected characteristics; and

a transportation unit for transporting notes from said note validator to said note storage area and for dispensing notes from said note storage area through said opening in said note validator in response to an instruction.

### **(a) Examiner’s Rejection of Claim 28**

The Examiner has given the same reasons for the rejections of claims 26-30 and those rejections are noted above in the discussion of claim 26.

**(b) Legal Standard for an Obviousness Rejection**

To establish obviousness, the prior art reference must teach or suggest all the claim limitations and it must be obvious to a person of ordinary skill in the art to combine the references. As the Supreme Court recently phrased the issue: “[t]he proper question to have asked was whether a designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading” the primary reference with a something from the secondary reference. *KSR Int. Inc. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007); *see also* M.P.E.P. § 2143 (requiring some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings). Under the MPEP test and the pre-*KSR* Federal Circuit standard, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

**(c) The combination of Ramachandran and Graef does not teach, describe, or suggest each claim element of claim 28.**

Applicant disagrees with the Examiner’s characterization of Ramachandran as intended to be used in a combination ATM/vending machine that dispenses merchandise. The Examiner indicates: “Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59...” the Abstract of Ramachandran does not discuss vending machines at all, it instead makes clear that Ramachandran is directed to an ATM machine “of the recycling currency type”. The Abstract states:

“The invention relates to an automated transaction machine of the recycling currency type. The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The automated transaction machine includes a chest portion and a top hat portion. The portions have a front side and a rear side. The rear side of the machine is primarily intended for use by the merchant. The front side of the machine is primarily intended for use by a customer. The merchant side of the chest portion includes an inlet opening for inserting cash and an outlet opening for dispensing cash. The customer side of the chest portion also includes an outlet opening for dispensing cash. The top hat portion includes a



separate user interface on the merchant side and a separate user interface on the customer side. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion."

Similarly, the text of the specification identified by the Examiner does not mention vending machines, Ramachandran at col. 2, lines 45-59; recites:

"Recently automated transaction machines have been developed that are capable of "recycling" currency. Such machines are capable of accepting currency notes from a user or operator, and determining the genuineness and particular type of each note. Such machines selectively store the deposited notes in locations within the machine. At a later time when the same or another user requests a dispense of notes, the machine dispenses the previously deposited notes to the user. While such machines have the capability of having the note supplies replenished without accessing the interior of the machine, such machines are generally complex and expensive. The installation of such a machine would generally not be cost justified in situations where relatively low cost, cash dispense only type machines are currently used."

Although the sections referenced by the Examiner do not teach, describe, or suggest vending machines, there is some discussion of vending machines in Ramachandran. However, the discussion does not teach, describe, or suggest the system of the claim that includes the operation of the machine in dispensing change and commercial products. For example, the background portion of the Ramachandran reference addresses multiple problems associated with having ATM machines incorporated into vending machines. In identifying multiple limitations and associated problems, Ramachandran never mentions or addresses the issue of how to interact with the vending machine so as to allow dispensing of currency, or in particular selected received currency, to recycle as change for vending transactions. After discussing the limitations, Ramachandran addresses the problem he seeks to resolve, stating at col. 3:43-52:

"Thus there exists a need for an automated transaction machine that is inexpensive to produce and operate, but that is also highly reliable. There further exists a need for an automated transaction machine that is capable of being replenished with currency notes or other sheets of value without having to access the note

storage areas in the interior of the machine. There further exists a need for an automated transaction machine which includes a note receiving and dispensing component that adds only limited cost to the production and operation of the machine.”

The system of Ramachandran is thus at most merely directed to the addition of an ATM to a vending machine so that two separate functions are provided in one location. However, there is no teaching, description, or suggestion in Ramachandran of using the note acceptor-dispenser mechanism of the ATM as part of the mechanism by which a commercial product is purchased and change is provided. As noted in col. 4 line 63 through col. 5, line 4 of Ramachandran which states: “The foregoing objects are accomplished in an exemplary embodiment by an automated transaction machine. The automated transaction machine may be a machine whose primary function is the receipt and/or dispensing of sheets such as currency notes. Alternatively the automated transaction machine may be associated with a primary function such as the vending of motor fuel, lottery tickets, transit tokens or other transactions and may include the dispensing and/or receipt of sheets having value, such as currency.” All subsequent description in Ramachandran are for the operation of the ATM portion of the system in typical ATM fashion, i.e. the deposit and/or withdrawal of currency by a customer or merchant. There is no teaching, description, or suggestion of using the mechanism of Ramachandran itself for accepting bills and providing products and, more importantly to the present invention, there is no discussion of providing selected currency for recycling as change for a vending transaction. Rather, the vending described in Ramachandran is a supplementary function that uses other mechanisms than are described in the device of Ramachandran.

With the foregoing limitations of Ramachandran in mind, applicant submits that not only would the proposed combination of components from Graef into the device of Ramachandran not be obvious, but significantly that the references (either alone or in combination) do not even teach all of the elements of the claims. For example, claim 28 recites the limitation of a note storage area to store notes received by the note validator when the notes are characterized by the note validator as meeting pre-selected characteristics, the notes being dispensed by the note acceptor-dispenser validator system in response to an instruction. The Examiner contends that any of the note boxes 30, 32, 34, 36, 38, and 40 of Katou read on this element. Applicant respectfully disagrees. Note box 40 of Graef is for receiving envelopes (Graef column 5, lines

44-50) and cannot teach, describe, or suggest the note hopper of the claim that both receives and dispenses notes. Note boxes 30 and 32 are in fact currency dispensers and do not receive notes validated by the note validator. These boxes 30 and 32 are loaded via canisters inserted in the machine and do not receive notes that pass into the machine via the note validator (Graef column 5, lines 9-24). Thus, note boxes 30 and 32 cannot teach, describe, or suggest the note hopper of the claim that receives notes that have been received by the note validator. Finally, note boxes 34, 36, and 38 are described as receiving and storing sheets in selected storage areas as well as selectively delivering sheets from the various storage areas (Graef column 5, lines 36-39). There is no teaching, description, or suggestion in Graef that the note boxes 34, 36, and 38 dispense notes in response to an instruction from the validator processor. Thus the cited combination does not teach this element of the claim.

As is clear from the description in Graef, the note boxes 34, 36, and 38 are very different from the note hopper of the claim. First of all, there is no teaching as to the types of notes that the note boxes 34, 36, and 38 are to receive. This is in contrast to the note hopper of the claim in which a "notes of a pre-selected denomination" are received and stored and dispensed in response to an instruction from the validator processor. Because the combination cited by the Examiner does not include all elements of the cited claim, the combination cannot teach, describe, or suggest the invention of the claim.

The cited combination also lacks the note acceptor-dispenser validator system that accepts a dispense change instruction and dispenses notes and coins as change as called out in the claim. Graef is an ATM machine directed to confirming that the transportation path is clear and operational. There is not discussion in Graef of making change for a transaction. There is no change in an ATM transaction since there is no product purchased or provided. Similarly, the Ramachandran reference has no teaching, description, or suggestion of making change including bills and coins. In fact, the Ramachandran reference does not mention coins at all. The only mention of change in Ramachandran is in column 41, lines 25-35 which state: "In some embodiments the controller may operate to provide the merchant user with messages prompting the user to indicate the number and denomination of notes they wish to receive. This may be valuable to a merchant user who requires particular denominations of notes from the machine to carry out the efficient operation of their business, such as for making change. Various approaches to presenting merchant users with withdrawal options may be provided in

embodiments of the invention through programming of a controller which controls operation of the machine.” Thus there is no teaching, description, or suggestion of this element of the claim.

**6. Claim 29**

Claim 29 is directed to a vending machine for dispensing product, the vending machine comprising:

a host machine for the dispensing of commercial products, said host machine including a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing, notes and coins as change based on communications with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, and said note acceptor-dispenser validator system further comprises:

a note validator having an opening for receiving notes and a validator head for sensing data relating to the authenticity, denomination, and type of note received by said note validator, said note validator generating signals corresponding to the sensed data for each received note;

a validator processor for receiving and comparing said sensed data signals with stored data to validate said notes and generate a signal signifying receipt and the value of said note to said host processor;

a note box configured to receive and hold notes received by said note validator;

a note hopper for receiving and storing pre-selected characteristic notes received by said note validator; and

a transportation unit for directing validated notes to one of said note box and said note hopper for dispensing notes from said note hopper through said opening in said note validator in response to a dispense signal.

**(a) Examiner's Rejection of Claim 29**

The Examiner has given the same reasons for the rejections of claims 26-30 and those rejections are noted above in the discussion of claim 26.

**(b) Legal Standard for an Obviousness Rejection**

To establish obviousness, the prior art reference must teach or suggest all the claim limitations and it must be obvious to a person of ordinary skill in the art to combine the references. As the Supreme Court recently phrased the issue: "[t]he proper question to have asked was whether a designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading" the primary reference with a something from the secondary reference. *KSR Int. Inc. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007); *see also* M.P.E.P. § 2143 (requiring some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings). Under the MPEP test and the pre-*KSR* Federal Circuit standard, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

**(c) The combination of Ramachandran and Graef does not teach, describe, or suggest each claim element of claim 29.**

Applicant disagrees with the Examiner's characterization of Ramachandran as intended to be used in a combination ATM/vending machine that dispenses merchandise. The Examiner indicates: "Ramachandran discloses an automated transaction machine (ATM) of the recycling currency type, as mentioned in Ramachandran's abstract and at col. 2, lines 45-59..." the Abstract of Ramachandran does not discuss vending machines at all, it instead makes clear that Ramachandran is directed to an ATM machine "of the recycling currency type". The Abstract states:

“The invention relates to an automated transaction machine of the recycling currency type. The machine permits a merchant to both store and withdraw cash. The machine also permits a customer to withdraw cash. The automated transaction machine includes a chest portion and a top hat portion. The portions have a front side and a rear side. The rear side of the machine is primarily intended for use by the merchant. The front side of the machine is primarily intended for use by a customer. The merchant side of the chest portion includes an inlet opening for inserting cash and an outlet opening for dispensing cash. The customer side of the chest portion also includes an outlet opening for dispensing cash. The top hat portion includes a separate user interface on the merchant side and a separate user interface on the customer side. The machine provides for the safekeeping of excess cash from a merchant's business operations. The machine enables the replenishment of cash therein without accessing the cash storage areas in the interior of the chest portion.”

Similarly, the text of the specification identified by the Examiner does not mention vending machines, Ramachandran at col. 2, lines 45-59; recites:

“Recently automated transaction machines have been developed that are capable of “recycling” currency. Such machines are capable of accepting currency notes from a user or operator, and determining the genuineness and particular type of each note. Such machines selectively store the deposited notes in locations within the machine. At a later time when the same or another user requests a dispense of notes, the machine dispenses the previously deposited notes to the user. While such machines have the capability of having the note supplies replenished without accessing the interior of the machine, such machines are generally complex and expensive. The installation of such a machine would generally not be cost justified in situations where relatively low cost, cash dispense only type machines are currently used.”

Although the sections referenced by the Examiner do not teach, describe, or suggest vending machines, there is some discussion of vending machines in Ramachandran. However, the discussion does not teach, describe, or suggest the system of the claim that includes the operation of the machine in dispensing change and commercial products. For example, the background portion of the Ramachandran reference addresses multiple problems associated with having ATM machines incorporated into vending machines. In identifying multiple limitations and associated problems, Ramachandran never mentions or addresses the issue of how to interact

with the vending machine so as to allow dispensing of currency, or in particular selected received currency, to recycle as change for vending transactions. After discussing the limitations, Ramachandran addresses the problem he seeks to resolve, stating at col. 3:43-52:

“Thus there exists a need for an automated transaction machine that is inexpensive to produce and operate, but that is also highly reliable. There further exists a need for an automated transaction machine that is capable of being replenished with currency notes or other sheets of value without having to access the note storage areas in the interior of the machine. There further exists a need for an automated transaction machine which includes a note receiving and dispensing component that adds only limited cost to the production and operation of the machine.”

The system of Ramachandran is thus at most merely directed to the addition of an ATM to a vending machine so that two separate functions are provided in one location. However, there is no teaching, description, or suggestion in Ramachandran of using the note acceptor-dispenser mechanism of the ATM as part of the mechanism by which a commercial product is purchased and change is provided. As noted in col. 4 line 63 through col. 5, line 4 of Ramachandran which states: “The foregoing objects are accomplished in an exemplary embodiment by an automated transaction machine. The automated transaction machine may be a machine whose primary function is the receipt and/or dispensing of sheets such as currency notes. Alternatively the automated transaction machine may be associated with a primary function such as the vending of motor fuel, lottery tickets, transit tokens or other transactions and may include the dispensing and/or receipt of sheets having value, such as currency.” All subsequent description in Ramachandran are for the operation of the ATM portion of the system in typical ATM fashion, i.e. the deposit and/or withdrawal of currency by a customer or merchant. There is no teaching, description, or suggestion of using the mechanism of Ramachandran itself for accepting bills and providing products and, more importantly to the present invention, there is no discussion of providing selected currency for recycling as change for a vending transaction. Rather, the vending described in Ramachandran is a supplementary function that uses other mechanisms than are described in the device of Ramachandran.

With the foregoing limitations of Ramachandran in mind, applicant submits that not only would the proposed combination of components from Graef into the device of Ramachandran

not be obvious, but significantly that the references (either alone or in combination) do not even teach all of the elements of the claims. For example, claim 29 recites the limitation of a note hopper for receiving and storing pre-selected characteristic notes received by the note validator, the notes being available to be subsequently dispensed from the note hopper in response to a dispense signal. The Examiner contends that any of the note boxes 30, 32, 34, 36, 38, and 40 of Katou read on this element. Applicant respectfully disagrees. Note box 40 of Graef is for receiving envelopes (Graef column 5, lines 44-50) and cannot teach, describe, or suggest the note hopper of the claim that both receives and dispenses notes. Note boxes 30 and 32 are in fact currency dispensers and do not receive notes validated by the note validator. These boxes 30 and 32 are loaded via canisters inserted in the machine and do not receive notes that pass into the machine via the note validator (Graef column 5, lines 9-24). Thus, note boxes 30 and 32 cannot teach, describe, or suggest the note hopper of the claim that receives notes that have been received by the note validator. Finally, note boxes 34, 36, and 38 are described as receiving and storing sheets in selected storage areas as well as selectively delivering sheets from the various storage areas (Graef column 5, lines 36-39). There is no teaching, description, or suggestion in Graef that the note boxes 34, 36, and 38 dispense notes in response to an instruction from the validator processor. Thus the cited combination does not teach this element of the claim.

As is clear from the description in Graef, the note boxes 34, 36, and 38 are very different from the note hopper of the claim. First of all, there is no teaching as to the types of notes that the note boxes 34, 36, and 38 are to receive. This is in contrast to the note hopper of the claim in which a "notes of a pre-selected denomination" are received and stored and dispensed in response to an instruction from the validator processor. Because the combination cited by the Examiner does not include all elements of the cited claim, the combination cannot teach, describe, or suggest the invention of the claim.

The cited combination also lacks the note acceptor-dispenser validator system that accepts a dispense change instruction and dispenses notes and coins as change as called out in the claim. Graef is an ATM machine directed to confirming that the transportation path is clear and operational. There is not discussion in Graef of making change for a transaction. There is no change in an ATM transaction since there is no product purchased or provided. Similarly, the Ramachandran reference has no teaching, description, or suggestion of making change including bills and coins. In fact, the Ramachandran reference does not mention coins at all. The only



mention of change in Ramachandran is in column 41, lines 25-35 which state: "In some embodiments the controller may operate to provide the merchant user with messages prompting the user to indicate the number and denomination of notes they wish to receive. This may be valuable to a merchant user who requires particular denominations of notes from the machine to carry out the efficient operation of their business, such as for making change. Various approaches to presenting merchant users with withdrawal options may be provided in embodiments of the invention through programming of a controller which controls operation of the machine." Thus there is no teaching, description, or suggestion of this element of the claim.

#### **7. Claim 30**

Claim 30 is a dependent claim depending on claim 29. Therefore, 30 includes all the limitations of Claim 29 and the Board should overturn the Examiner's rejection of Claim 30 at least for the reasons expressed with respect to Claim 29 which is incorporated herein by reference.

**C. Conclusion**

In view of the foregoing arguments, Claims 26-30 are patentable over the cited combinations for the reasons set forth above and the rejection must be rejected and the claims allowed.

Respectfully submitted,

**DLA Piper US LLP**

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By



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## CLAIMS APPENDIX

26. A customer service device comprising:

a host machine for the vending of commercial products, said host machine including a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing of notes and coins as change based on the communication with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, said note acceptor-dispenser validator system including;

a note validator for receiving notes and sensing data relating to the authenticity, denomination, type and condition of notes received by said note validator, said note validator generating signals corresponding to the sensed data for each received note;

a validator processor for receiving and comparing said sensed data signals with stored data to validate said notes;

a note box configured to receive and hold notes received by said note validator;

a note hopper for receiving and storing up to a selected number of notes of a pre-selected denomination which are received by said note validator; and

a transportation unit for directing said notes determined to be authentic to one of said note box and said note hopper and for dispensing notes from said note hopper in response to an instruction from said validator processor.

27. A vending machine comprising:

a host machine for the automated sale of commercial products, said host machine including a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing of, notes and coins as change based on the communication with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, and said note acceptor-dispenser validator system includes;

a note validator for receiving notes and sensing data identifying the type and condition of the received notes;

a note box to hold notes received by said note validator;

a note hopper to temporarily hold pre-selected characteristic notes received by said note validator, said notes being available to be subsequently dispensed by said note acceptor-dispenser validator system; and

a transportation unit for transporting received notes from said note validator to one of said note box and said note hopper and for transporting notes from said note hopper out through said note validator in response to an instruction.

28. A vending machine comprising:

a host machine for the automated sale of commercial products, said host machine having a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing notes and coins as change based on communications with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, and said note acceptor-dispenser validator system further comprises;

a note validator having an opening for receiving notes;

a note storage area to store notes received by said note validator when said notes are characterized by said note validator as meeting pre-selected characteristics; and

a transportation unit for transporting notes from said note validator to said note storage area and for dispensing notes from said note storage area through said opening in said note validator in response to an instruction.

29. A vending machine for dispensing product, the vending machine comprising:

a host machine for the dispensing of commercial products, said host machine including a host processor, and a housing;

a note acceptor-dispenser validator system for accepting currency notes and issuing credits to the host processor to cause the dispensing of the commercial products;

said note acceptor-dispenser validator system being further configured to accept a dispense change instruction from said host processor to cause the processing, and dispensing notes and coins as change based on communications with said host processor, wherein said acceptor-dispenser validator system is mounted in said housing, and said note acceptor-dispenser validator system further comprises:

a note validator having an opening for receiving notes and a validator head for sensing data relating to the authenticity, denomination, and type of note received by said note validator, said note validator generating signals corresponding to the sensed data for each received note;

a validator processor for receiving and comparing said sensed data signals with stored data to validate said notes and generate a signal signifying receipt and the value of said note to said host processor;

a note box configured to receive and hold notes received by said note validator;

a note hopper for receiving and storing pre-selected characteristic notes received by said note validator; and

a transportation unit for directing validated notes to one of said note box and said note hopper for dispensing notes from said note hopper through said opening in said note validator in response to a dispense signal.

30. The vending machine for dispensing product of claim 29, wherein said validator head determines the value of notes dispensed by said note acceptor-dispenser prior to their being dispensed.

## EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None